

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. - 19. (Canceled)

20. (Currently Amended) A method for transcoding a source codec bitstream in a source codec format to a destination variable-rate codec bitstream in a destination variable-rate codec format, the method comprising:

unpacking the source codec bitstream to at least one or more source voice parameters;

interpolating the one or more source voice parameters to one or more interpolated voice parameters if a difference exists between at least one of a source frame size and a destination frame size or a source subframe size and a destination subframe size or a source sampling rate and a destination sampling rate;

classifying a frame class based upon the one or more source voice parameters or the one or more interpolated voice parameters, wherein the frame class is selected from three or more frame classes The method of claim 18, wherein classifying the frame class comprises:

selecting one or more voice parameters from the one or more source voice parameters or the one or more interpolated voice parameters;

using a previously stored state information;

performing frame classification to produce the frame class;

outputting the frame class; and

updating the previously stored state information for use in classifying one or more future frames;

determining a rate from at least one of the one or more source voice parameters, the one or more interpolated voice parameters, the frame class, and one or more external control

commands, wherein the rate is selected from three or more rates associated with the destination variable-rate codec format;

mapping the one or more source voice parameters or the one or more interpolated voice parameters to one or more mapped voice parameters; and

packing the one or more mapped voice parameters into the destination variable-rate codec bitstream.

21. (Currently Amended) A method for transcoding a source codec bitstream in a source codec format to a destination variable-rate codec bitstream in a destination variable-rate codec format, the method comprising:

unpacking the source codec bitstream to at least one or more source voice parameters;

interpolating the one or more source voice parameters to one or more interpolated voice parameters if a difference exists between at least one of a source frame size and a destination frame size or a source subframe size and a destination subframe size or a source sampling rate and a destination sampling rate;

classifying a frame class based upon the one or more source voice parameters or the one or more interpolated voice parameters, wherein the frame class is selected from three or more frame classes;

determining a rate from at least one of the one or more source voice parameters, the one or more interpolated voice parameters, the frame class, and one or more external control commands, wherein the rate is selected from three or more rates associated with the destination variable-rate codec format ~~The method of claim 18, wherein determining the rate comprises:~~

selecting one or more voice parameters from the one or more source voice parameters or the one or more interpolated voice parameters and a source frame rate associated with the source codec bitstream;

using the frame class;

using the one or more external control commands;

using a previously stored state information;
performing rate determination to produce the rate;
outputting the rate; and
updating the previously stored state information for use in determining one or more rates for one or more future frames;

mapping the one or more source voice parameters or the one or more interpolated voice parameters to one or more mapped voice parameters; and
packing the one or more mapped voice parameters into the destination variable-rate codec bitstream.

22. (Previously Presented) The method of claim 20 wherein frame classification uses one or more pre-defined coefficients.

23. (Previously Presented) The method of claim 21 wherein rate determination uses one or more pre-defined coefficients.

24. - 25. (Canceled)

26. (Currently Amended) The method of ~~claim 18~~ claim 20, wherein mapping comprises:

selecting one of a plurality of voice codec mapping strategies;
mapping one or more source LSP coefficients or one or more interpolated LSP coefficients to one or more destination LSP coefficients;
quantizing the one or more destination LSP coefficients; and
mapping one or more source excitation parameters or one or more interpolated excitation parameters to one or more destination excitation parameters; and
quantizing the one or more destination excitation parameters.

27. (Currently Amended) A method for transcoding a source codec bitstream in a source codec format to a destination variable-rate codec bitstream in a destination variable-rate codec format, the method comprising:

unpacking the source codec bitstream to at least one or more source voice parameters;

interpolating the one or more source voice parameters to one or more interpolated voice parameters if a difference exists between at least one of a source frame size and a destination frame size or a source subframe size and a destination subframe size or a source sampling rate and a destination sampling rate;

classifying a frame class based upon the one or more source voice parameters or the one or more interpolated voice parameters, wherein the frame class is selected from three or more frame classes;

determining a rate from at least one of the one or more source voice parameters, the one or more interpolated voice parameters, the frame class, and one or more external control commands, wherein the rate is selected from three or more rates associated with the destination variable-rate codec format;

mapping the one or more source voice parameters or the one or more interpolated voice parameters to one or more mapped voice parameters ~~The method of claim 26, wherein mapping further comprises:~~

selecting one of a plurality of voice codec mapping strategies;

mapping one or more source LSP coefficients or one or more interpolated LSP coefficients to one or more destination LSP coefficients;

quantizing the one or more destination LSP coefficients;

mapping one or more source excitation parameters or one or more interpolated excitation parameters to one or more destination excitation parameters;

quantizing the one or more destination excitation parameters.

reconstructing an excitation signal from the one or more source excitation parameters or the one or more interpolated excitation parameters;

filtering the excitation signal with a calibration factor to produce a calibrated excitation signal; and
processing the calibrated excitation signal to produce the one or more destination excitation parameters;
packing the one or more mapped voice parameters into the destination variable-rate codec bitstream.

28. (Currently Amended) The method of ~~claim 26~~ claim 27 wherein the plurality of voice code mapping strategies include at least one of:

a direct space mapping of voice parameters;
a mapping using analysis in excitation space;
a mapping using analysis in filtered excitation space; and
a mapping using a combination of two or more voice codec mapping strategies.

29. (Previously Presented) The method of claim 27 wherein reconstructing the excitation signal does not include a process of modifying the excitation signal to match an interpolated delay contour.

30. - 34. (Canceled)

35. (Previously Presented) The method of claim 28 wherein the mapping using analysis in excitation space is performed without using a signal in a speech signal domain.

36. - 55. (Canceled)

56. (Currently Amended) The method of ~~claim 18~~ claim 20 wherein the destination variable-rate codec is EVRC.

57. (Currently Amended) The method of ~~claim 18~~ claim 20 wherein the destination variable-rate codec is SMV.

58. (Currently Amended) The method of claim 18 claim 20 wherein the destination variable-rate codec is a Relaxed CELP voice codec.

59. (Currently Amended) The method of claim 18 claim 20 wherein the source codec and the destination variable-rate codec are within a single standard but are different modes.

60. (Currently Amended) The method of claim 18 claim 20 wherein the three or more frame classes are silence, unvoiced, onset, plosive, non-stationary voiced, and stationary voiced speech.

61. (Currently Amended) The method of claim 18 claim 21 wherein the three or more rates comprise a full rate, a half rate and an eighth rate.

62. (Canceled)

63. (Currently Amended) A method for transcoding a source codec bitstream in a source codec format to a destination variable-rate codec bitstream in a destination variable-rate codec format, the method comprising:

unpacking the source codec bitstream to at least one or more source voice parameters;

interpolating the one or more source voice parameters to one or more interpolated voice parameters if a difference exists between at least one of a source frame size and a destination frame size or a source subframe size and a destination subframe size or a source sampling rate and a destination sampling rate;

classifying a frame class based upon the one or more source voice parameters or the one or more interpolated voice parameters, wherein the frame class is selected from three or more frame classes;

determining a rate from at least one of the one or more source voice parameters, the one or more interpolated voice parameters, the frame class, and one or more external control

commands, wherein the rate is selected from three or more rates associated with the destination variable-rate codec format;

mapping the one or more source voice parameters or the one or more interpolated voice parameters to one or more mapped voice parameters, wherein the mapping comprises selecting a mapping path from three or more mapping paths, The method of claim 62 wherein selecting a mapping path uses at least a source frame rate, the rate and the one or more external commands; and

packing the one or more mapped voice parameters into the destination variable-rate codec bitstream.

64. (Previously Presented) The method of claim 63 wherein the one or more external commands comprise one of a mode selected from six SMV modes or an EVRC external rate command.

65. (Currently Amended) A method for transcoding a source codec bitstream in a source codec format to a destination variable-rate codec bitstream in a destination variable-rate codec format, the method comprising:

unpacking the source codec bitstream to at least one or more source voice parameters;

interpolating the one or more source voice parameters to one or more interpolated voice parameters if a difference exists between at least one of a source frame size and a destination frame size or a source subframe size and a destination subframe size or a source sampling rate and a destination sampling rate;

classifying a frame class based upon the one or more source voice parameters or the one or more interpolated voice parameters, wherein the frame class is selected from three or more frame classes;

determining a rate from at least one of the one or more source voice parameters, the one or more interpolated voice parameters, the frame class, and one or more external control

commands, wherein the rate is selected from three or more rates associated with the destination variable-rate codec format;

mapping the one or more source voice parameters or the one or more interpolated voice parameters to one or more mapped voice parameters, wherein mapping comprises selecting a mapping path from three or more mapping paths, The method of claim 62 wherein selecting a mapping path uses at least one or more of a source frame rate and a source SMV frame type; and
packing the one or more mapped voice parameters into the destination variable-rate codec bitstream.

66. - 67. (Cancelled)

68. (Currently Amended) The method of ~~claim 18~~ claim 20 wherein classifying a frame is performed without reconstructing a speech signal.

69. (Previously Presented) The method of claim 20 wherein the previously stored state information comprises one or more source frame rates, one or more destination frame classes and one or more destination frame rates.

70. (Previously Presented) The method of claim 21 wherein the previously stored state information comprises one or more source frame rates, one or more destination frame classes and one or more destination frame rates.

71. (Currently Amended) The method of ~~claim 28~~ claim 27 wherein the mapping using a combination of two or more voice codec mapping strategies is a mapping using a combination of analysis in excitation space and analysis in filtered excitation space.

72. (Currently Amended) The method of ~~claim 18~~ claim 21 wherein the rate is determined from the frame class ~~and zero or more of the one or more source voice parameters, the one or more interpolated voice parameters, and the one or more external control commands.~~

73. (New) The method of claim 21 wherein mapping comprises:

selecting one of a plurality of voice codec mapping strategies;
mapping one or more source LSP coefficients or one or more interpolated LSP coefficients to one or more destination LSP coefficients;
quantizing the one or more destination LSP coefficients;
mapping one or more source excitation parameters or one or more interpolated excitation parameters to one or more destination excitation parameters; and
quantizing the one or more destination excitation parameters.